

BEARINX[®] - online Easy RopeSheave

Reliable calculation of rope sheave bearing supports

High-performance calculation software ...

Along with developing and manufacturing top-quality precision parts, great service is an important tradition at Schaeffler. Rolling bearing design is one of the focal points of our design support. We want to give you a competitive edge by supplying you with perfectly designed products. We have already been using calculation programs successfully for 50 years to meet these requirements.

BEARINX® – a leading program

BEARINX® enables users to calculate, display, and document specific bearing loads in detail while taking operating and environmental conditions into consideration – even for complex machine systems. The contact pressure on every single rolling element is considered in the calculation.

Extra module for rope sheave bearings

There is a dedicated module for rope sheave bearing supports that allows even several adjacent rope sheaves to be calculated precisely. Among others, BEARINX® considers the following factors:

- The non-linear elastic deflection behavior of the rolling elements
- Load-related contact angle shifts in the case of radial ball bearings
- The actual contact pressure, taking skewing and profiling of the rolling elements into consideration
- The elasticity of the axis

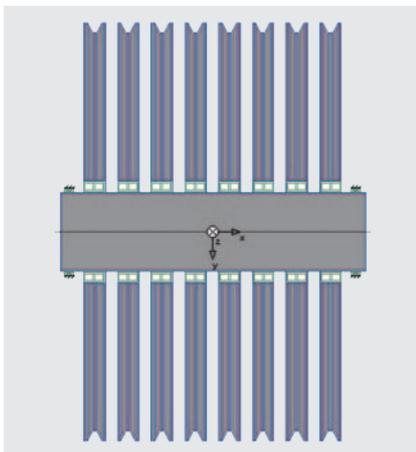
The “Easy series” for online customers

With “Easy RopeSheave”, it is now possible to calculate the static load safety factor and operating life of single and multiple rope sheave bearing supports (Figure 1). To do this, the program

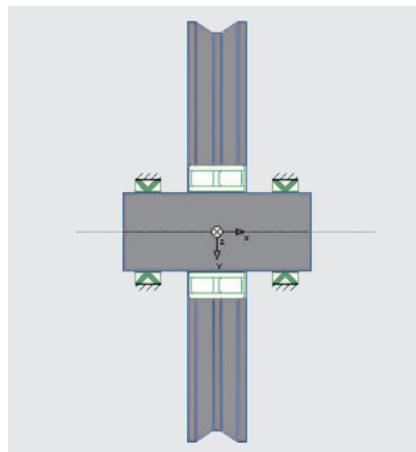
accesses Schaeffler’s bearing database, which means that radial roller bearings, radial deep groove ball bearings, and radial tapered roller bearings can be integrated without any problems (Figure 2). Influencing factors that are typical for the application take effect here:

- Consideration of the rope sheave material
- Integration of a bush between the bearing and plastic rope sheave (Figure 3)
- Precise data on the bearing’s internal geometry, including the rolling element and raceway profiling
- The system temperature as an influencing factor for bearing clearance (thermal expansion of the axis, bearing, and rope sheave components)

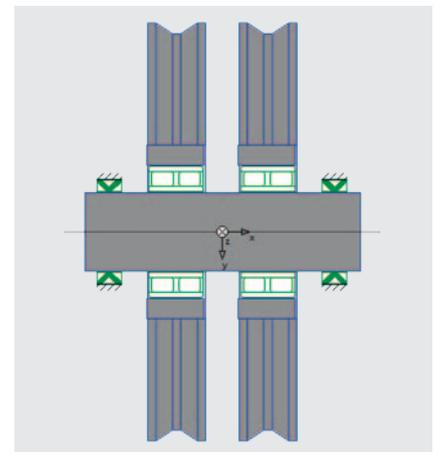
In this way, it is possible to quickly and reliably browse through and compare a range of different bearing support variants.



① Bearing support of a maximum of eight adjacent rope sheaves



② Bearing support of a rope sheave with an SL04 radial roller bearing



③ Bearing support of plastic rope sheaves with additional integrated steel bushes

... with self-explanatory menu navigation

User-friendly interface

Thanks to its self-explanatory menu navigation, “Easy RopeSheave” enables users to enter data quickly and easily for modeling, bearing selection (Figure 4) and operating data (Figure 5). The bearing data of INA and FAG rolling bearings are easily loaded from an integrated data-base. The rope sheave system loads, wrap angles, diagonal pull forces, and operating temperatures are all entered under “Operating data”. Following the free entry of the application data, the calculation process can be started.

Data exchange with Schaeffler

All input data can be saved. This enables any relevant changes to an existing design to be made quickly without having to enter the data twice. Furthermore, any saved files can be exchanged with

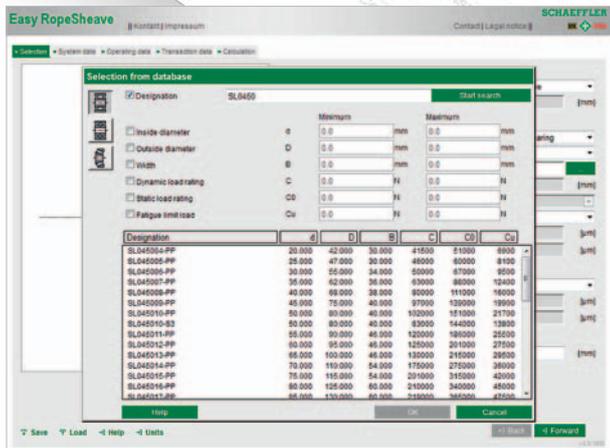
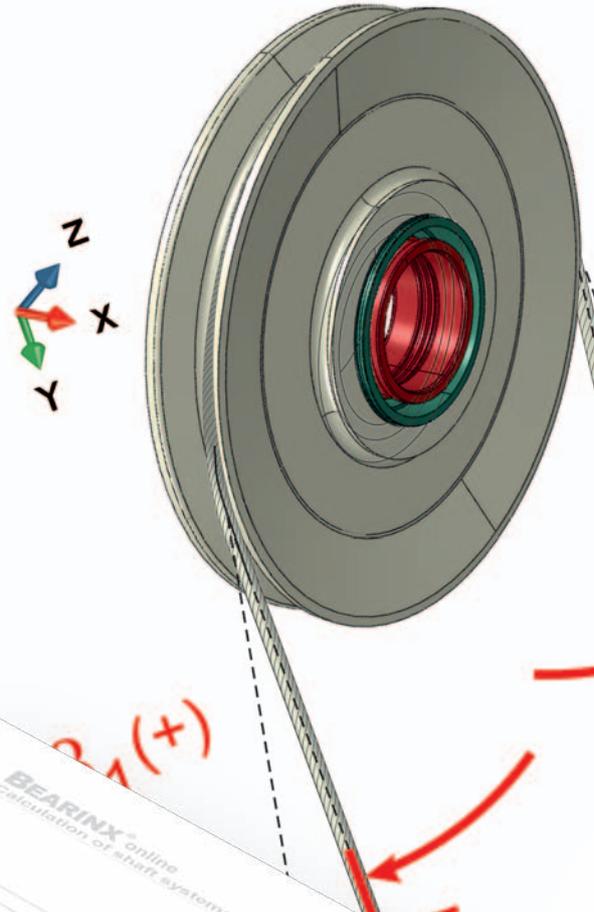
Schaeffler’s Engineering Service in order to produce an optimum bearing design.

Calculation and documentation

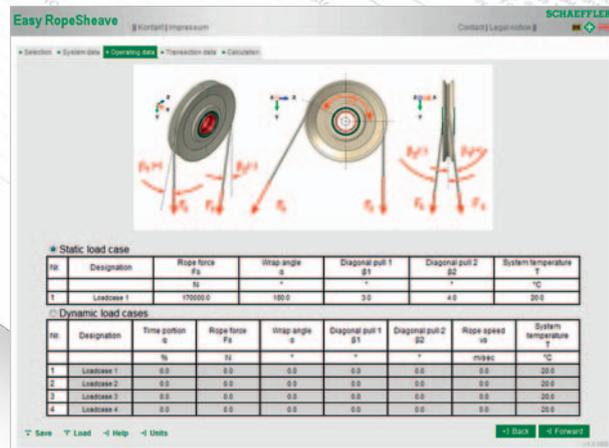
Calculations are carried out on Schaeffler’s powerful calculation servers. Once the calculation has been successfully completed, the input data and the calculation results are documented in a PDF file (Figure 6).

What to be aware of

BEARINX®-online Easy RopeSheave can only be used for the calculation of Schaeffler products. The operator is responsible for the design and configuration of the adjacent components (e.g. rope sheave, bush, and axis). The information provided in our HR1 rolling bearing catalog should be taken into account as a basis.



④ Bearing selection from the database – example: SL04-series radial roller bearings



⑤ Operating data entry

⑥ Results view

Registration: BEARINX[®]-online Easy RopeSheave



The calculation program BEARINX[®]-online Easy RopeSheave is available online only and can be used free of charge. After initial registration, which takes very little time, you can start your calculation immediately.

<http://bearinx-online-easy-ropesheave.schaeffler.com>

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